

**List of recommended courses from other programs (12 credits max. with Specialization "Materials research and development" / 6 credits max. with Minor)**

Code	Courses	Lecturers	Programs	Semesters		Credits	Exams
				MA1/3	MA2		
Effective courses from other programs (max. 12 ECTS credits if Specialization Materials research and development / 6 ECTS credits if Minor)							
RO-498	Entrepreneurship in food & nutrition science	Fenge/Li/Bur/an der Boek	GGC	1	1, 2, 2	4	During semester
CH-413	Nanobiotechnology	Steinauer	GGC	1	1, 2, 2	3	written
CH-421	Analysis for energy storage	Hu Xile	GGC	2	2	2	written
CH-426	Artificial photosynthesis	Zakeeruddin	GGC	2	2	2	oral
CHE-201	Introduction to chemical engineering	Harammakidis	GGC	2	2	2	written
CHE-203	Introduction au génie chimique et à l'énergie TP	Boussaint	GGC	2	2	2	During semester
CHE-402	Optimistic and mass transfer	Garimella	GGC	2	2	2	written
CHE-403	Thermodynamic systems	Garimella	GGC	2	2	2	written
CHE-456	Pharmaceutical biotechnology	Reich	GGC	2	2	2	written
CIVL-351	Advanced computer in engineering	Mohamed/Arifovic	GGC	2	2	2	written
CIVL-351	Dimensionnement des structures en bois	Naher Jc	GR	2	2	2	oral
CIVL-401	Advanced computer in engineering	Mohamed/Arifovic	GGC	2	2	2	written
CIVL-454	Advanced computer in engineering	Mohamed/Arifovic	GGC	2	2	2	written
CIVL-510	Quantitative imaging for civil engineering	Ando	GGC	2	2	2	During semester
CIVL-532	Materials of structures	Derung	GGC	2	2	2	oral
EE-517	Nanoelectronics	Bonson	EL	2	2	2	written
EN-401	Introduction to energy and environment	Stiller	EL	2	2	2	written
EN-402	Space mission design and operations	Stiller	EL	2	2	2	written
ENGL-410	Energy supply, economics and transition	Binder C./Thalmann Ph./Ballif	SE/AR/MT	2	2	2	written
ENGL-433	Chimie des denrées alimentaires	Richard	GGC	2	2	2	oral
ENGL-435	Chemistry of food processes	Blank	GGC	2	2	2	written
ENGL-436	Food biotechnology	Sysoema	GGC	2	2	2	written
ENGL-442	Energy and environment in building	Stiller/Leung	EL	2	2	2	During semester
ENGL-520	Environmental impact of energy	Stiller	EL	2	2	2	written
ENV-406	Bioremediation: from nature to application	Adame-Melton	SE	2	2	2	During semester
ENV-409	Oil pollution	Kokkonen/Rittmann	SE	2	2	2	written
ENV-470	Development engineering	Makohlou/Schönenberger	SE	2	2	2	During semester
ENV-500	Solid waste engineering	Ludwig	SE	2	2	2	During semester
ENV-501	Material and energy flow analysis	Hocher/Binder/Moran	SE	2	2	2	During semester
ENV-526	Introduction to building of smart	Stiller/Leung	EL	2	2	2	written
ME-217	Biomechanics of the musculoskeletal system	Stenopulos	GM	2	2	2	written
ME-311	Oral medicine	Wang	GM	2	2	2	written
ME-333	Microscopic observation	Wang	GM	2	2	2	written
ME-342	Introduction aux turbomachines	Fahri	GM	2	2	2	written
ME-409	Energy conversion and renewable energy	Manchal/Neuyen	GM	2	2	2	written
ME-411	Introduction to additive manufacturing	Rehner/Braeger/Moser	GM	2	2	2	written
ME-419	Fracture mechanics	Kahn	GM	2	2	2	During semester
ME-420	Micro/thermomechanical devices	Hillmann	GM	2	2	2	written
ME-451	Advanced energetics	Manchal	GM	2	2	2	oral
ME-460	Renewable energy (for ME)	Hausser/Van Herf	GM	2	2	2	written
ME-474	Numerical flow simulation	Bouas	GM	2	2	2	During semester
ME-481	Biomechanics of the cardiovascular system	Stenopulos	GM	2	2	2	written
ME-516	Lifecycle performance of product systems	Brand	GM	2	2	2	During semester
MICRO-312	Physique des composants semi-conducteurs	Besse	MT	2	2	2	oral
MICRO-330	IC systems	Shah/Baum	MT	2	2	2	written
MICRO-331	Micro-fabrication technologies	Gis/Bragger J	MT	2	2	2	oral
MICRO-420	Selected topics in advanced optics	Martin	MT	2	2	2	oral
MICRO-425	Thin film deposition and applications for optoelectronics	Wang	MT	2	2	2	oral
MICRO-438	Manufacturing systems and supply chain systems	Stiller/Leung	MT	2	2	2	oral
MICRO-470	Scaling laws & simulations in micro & nanosystems	Wang	MT	2	2	2	oral
MICRO-431	Materials & Technology of microfabrication	Gis/Lehner	MT	2	2	2	oral
MICRO-516	Nanophotonics	Ladanza/Moslund	MT	2	2	2	oral
MICRO-520	Laser micromachining	Hofmann	MT	2	2	2	oral
MICRO-523	Optical detectors	Besse P. A.	MT	2	2	2	oral
MICRO-561	Biointerface I	Blug	SO	3	1	2	written
MICRO-562	Biointerface II	Blug & Serr	SO	3	1	2	oral
MICRO-565	Fundamentals and processes for photovoltaic devices	Ballif	MT	2	2	2	written
MICRO-566	Large-area electronics: devices and materials	Ballif/Huang/Wirsch	MT	2	2	2	oral
PHYS-301	Biophysics: physics of the cell	Manley	PH	2	2	2	written
PHYS-317	Optique I	Dwlr	PH	2	2	2	oral
PHYS-404	Controlled simulation of physical systems I	Zeigler/Leung	PH	2	2	2	oral
PHYS-405	Experimental methods in physics	Dow/Castoni	PH/AM	2	2	2	oral
PHYS-433	Semiconductor physics and light-matter interaction	Burtz	PH	2	2	2	written
PHYS-438	Fundamentals of biomedical imaging	Gautier	PH	2	2	2	written
PHYS-445	Nuclear fusion and plasma physics	Faehl	PH	2	2	2	oral
PHYS-491	Magnetism in materials	Zakovic	PH	2	2	2	oral
PHYS-501	Nonlinear optics	Blug	PH	2	2	2	written